

BRYOZOA FROM SOUTH AUSTRALIA

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Text figs. 31-35.

By the courtesy of the authorities of the South Australian Museum I have been able to examine, and compile the following notes upon, a small portion of the extensive bulk collections of Bryozoa under their care. Most of the dredgings were secured by Sir Joseph Verco, Honorary Conchologist to the above institution, to whom many scientific workers are indebted for the extensive collections of marine animals that he has dredged in the seas of southern Australia.

The work so far accomplished on recent South Australian forms is meagre when compared with that concerning species of other States. The first worker to recognize this was MacGillivray, to whom credit is due for the initial investigation of the South Australian species; Hutton and Mapleston were also responsible for the record of several forms, while other isolated records by various authors have assisted our knowledge.

In regard to the present collection, nothing of outstanding importance can be claimed, apart from the discovery of two new species, and the rediscovery of *Parmularia macneilli*, which was described in the first part of my "Studies on Australian Bryozoa" (1).

All the material examined was dredged and, as is often the case with such collections, it is not in the best condition for study. Nevertheless, most of the species can be recognized with little difficulty, and there are extremely few beyond the possibility of generic identification.

As the literature on the South Australian species is small and so easily assembled, a revision has been considered unnecessary. The contributions on recent marine South Australian Bryozoa to be consulted are:

Hutton, Proc. Roy. Soc. Tasmania, 1876 (1877), pp. 23-25.

MacGillivray, Trans. Proc. Roy. Soc. S. Austr., xii, 1889, pp. 24-30.

MacGillivray, Trans. Proc. Roy. Soc. S. Austr., xiii, 1890, pp. 1-7.

Mapleston, Proc. Roy. Soc. Victoria, xvi (n.s.) ii, 1903 (1904), pp. 207-217.

Mapleston, Proc. Roy. Soc. Victoria, (n.s.) xxiii, i, 1910, pp. 39-41.

(1) Livingstone, Rec. Aust. Mus., xiv, 3, 1924, p. 194.

Maplestone, Proc. Roy. Soc. Victoria, (n.s.) xxiii, i, 1910, pp. 42-43.

Bale, Proc. Roy. Soc. Victoria, (n.s.) xxxv, i, 1922, p. 109.

Harmer, "Siboga" Exped., Polyzea ii, Monogr. xxviii, 1926, pp. 182-501
(this work contains records of specimens from S. Austr. which are
in British Museums).

Following is a list of the species in the present collection; those marked
with an asterisk are new records for the State of South Australia.

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| <i>Caleschara denticulata</i> (MacGill.). | <i>Schizoporella acuminata</i> Hincks |
| <i>Capidozoum falcata</i> (MacGill.). | (fossil record only). |
| * <i>Hiantopora radicefera</i> (Hincks). | <i>Parmularia obliqua</i> (MacGill.). |
| <i>Hiantopora ferax</i> (MacGill.). | * <i>Parmularia macneilli</i> Livingstone. |
| <i>Steganoporella magnilabris</i> (Busk). | * <i>Emballothecca quadrata</i> (MacGill.). |
| <i>Thairopora dispar</i> (MacGill.). | <i>Peristomella excavata</i> (MacGill.). |
| * <i>Thairopora mamillaris</i> (MacGill.). | <i>Didymosella larralis</i> (MacGill.). |
| * <i>Selenaria punctata</i> Ten.-Woods. | * <i>Haascellina coronata</i> (Reuss). |
| <i>Lunularia capadus</i> (Busk). | <i>Gephyrophora bilarrata</i> (Hincks). |
| <i>Cellaria rigida</i> MacGill. | <i>Microporella ciliata</i> (Linn.). |
| <i>Cellaria australis</i> MacGill. | <i>Calloporina diadema</i> (MacGill.). |
| * <i>Cellaria fistulosa</i> (Linn.). | * <i>Conescharellina angulopora</i> (Ten.- |
| * <i>Cellaria angustiloba</i> (Busk). | Woods). |
| <i>Arachnopusia monoceros</i> (Busk). | * <i>Bipora umbonata</i> (Hasw.). |
| <i>Scuticella ventricosa</i> (Busk). | * <i>Smittina nitida</i> (Verrill). |
| <i>Adeona grisea</i> Lamouroux. | * <i>Smittina reticulata</i> (MacGill.). |
| <i>Adeonellopsis foliacea</i> MacGill. | * <i>Sphaeropora fossa</i> (Hasw.). |
| <i>Retepora phoenicea</i> Busk. | <i>Pelralia undata</i> MacGill. |
| <i>Retepora monilifera</i> MacGill. var. | <i>Pelralia vultur</i> (Hincks). |
| <i>muicula</i> Hincks. | * <i>Pelralia halei</i> sp. nov. |
| <i>Tubocellaria hirsuta</i> (Lam.). | * <i>Amathia spiralis</i> Lamx. |
| * <i>Schizoporella vercoi</i> sp. nov. | |

CALESCHARA DENTICULATA (MacGillivray).

Fig. 31.

Eschara denticulata MacGillivray, Trans. Proc. Roy. Soc. Victoria, ix, 1868
(1869), p. 138.

Caleschara denticulata MacGillivray in McCoy, Prodr. Zool. Victoria, dec. v.
1880, p. 45, pl. xlviii, fig. 8.

This species is not uncommon in eastern and southern waters of the Aus-
tralian continent.

Loc. South Australia: Investigator Strait, 20 fathoms; Beachport, 40
fathoms, 26.12.1905; 7 miles S.W. of Newland Head, Encounter Bay, 20 fathoms.

22.11.1906; 3 miles S. of Tunk Heads, 16 fathoms; off Ardrossan, Gulf St. Vincent, 14 fathoms.

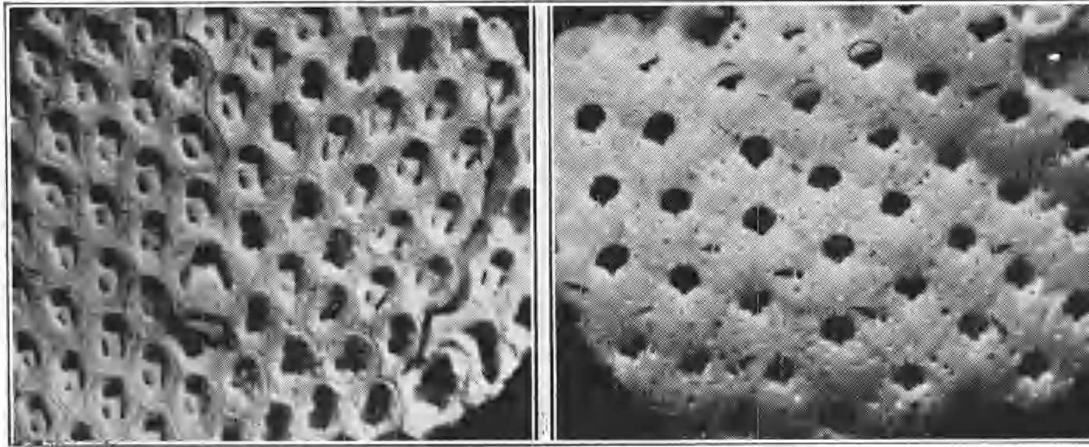


Fig. 31. *Caleschara denticulata*. Zoecial detail of an old and heavily calcified colony. Photo, G. C. Clutton.

Fig. 32. *Schizoporella vercoi*. Zoecial detail. Photo, G. C. Clutton.

CAPIDOZOUM FALCATA (MacGillivray).

Membranipora falcata MacGillivray, Trans. Proc. Roy. Soc. Victoria, ix, 1869, p. 132.

Membranipora perminuta Hincks, Ann. Mag. Nat. Hist. (5) vii, 1881, p. 151.

Amphiblestrum perminutum MacGillivray in McCoy, Prodr. Zool. Viet., dec. xi, 1885, p. 22, pl. 106, fig. 3.

Capidozoum falcata Harmer, "Siboga" Exped., Polyzoa ii, Monogr. xxviii b, 1926, p. 227.

This species is represented in the collection by a single fragment which is devoid of oocelia.

Loc. South Australia: 3 miles S. of Tunk Heads, 16 fathoms.

HIANTOPORA RADICIFERA (Hincks).

Membranipora radicifera Hincks, Ann. Mag. Nat. Hist. (5) viii, 1881, p. 3, pl. ii, figs. 6, 6a, 6b.

Hiantopora radicifera Leviusen, Morph. Syst. Stud. Cheil. Bryozoa, 1909, p. 111, pl. iv, figs. 6a-6c.

Tremopora radicifera Canu and Bassler, U.S. Nat. Mus., Bull. 106, 1920, p. 139.

Hiantopora radicifera Harmer, "Siboga" Exped., Polyzoa ii, Monogr. xxviii b, 1926, p. 236, pl. 34, fig. 4.

Loc. South Australia: 3 miles S. of Tunk Heads, 16 fathoms.

HIANTOPORA FEROX (MacGillivray).

Lepralia ferox MacGillivray, Trans. Proc. Roy. Soc. Victoria, ix, 1868 (1869), p. 132.

Hiantopora ferox Harmer, "Siboga" Exped., Polyzoa ii, Monogr. xxviii, 1926, p. 236.

Loc. South Australia: 12 miles S.E. by S. of Newland Head, Encounter Bay, 24 fathoms.

STEGANOPORELLA MAGNILABRIS (Busk).

Membranipora magnilabris Busk, Brit. Mus. Catal. Marine Polyzoa, i, 1852, p. 62, pl. lxxv, fig. 4.

Steganoporella magnilabris Harmer, Quart. Journ. Micr. Sci., 43, ii (n.s.), 1900, p. 279, figs. 10, 31, 44, 45, 46.

Loc. South Australia: Beachport, 40 fathoms; 7 miles S.W. of Newland Head, Encounter Bay, 20 fathoms, 22.11.1906; 3 miles S. of Tunk Heads, 16 fathoms; off Port Wallaroo, 15 fathoms, January, 1905.

THAIROPORA DISPAR (MacGillivray).

Membranipora dispar MacGillivray, Trans. Proc. Roy. Soc. Victoria, ix, 1868 (1869), p. 131.

Thairopora dispar Harmer, "Siboga" Exped., Polyzoa ii, Monogr. xxviii, 1926, p. 288.

Loc. South Australia: Off Port Morowie, 14 fathoms.

THAIROPORA MAMILLARIS (MacGillivray) (Lamouroux ?).

Membranipora mamillaris MacGillivray, Trans. Phil. Inst. Victoria, iv, 1860, p. 165, pl. ii, fig. 3.

Thairopora mamillaris Harmer, "Siboga" Exped., Polyzoa ii, Monogr. xxviii, 1926, p. 289.

Loc. South Australia: Port Willunga, 14 fathoms.

SELENARIA PUNCTATA TENISON-WOODS.

Selenaria punctata Tenison-Woods, Trans. Roy. Soc. South Austr., iii, 1880, p. 9, pl. ii, figs. 8a-8c.

Selenaria punctata Waters, Journ. Linn. Soc. Zool., xxxiv, 1921, p. 416, pl. xxix, fig. 7.

Loc. South Australia: Off Ardrossan, Gulf St. Vincent, 6-8 fathoms; Investigator Strait, 20 fathoms.

LUNULARIA CAPULUS (Busk).

Lunulites capulus Busk, Brit. Mus. Catal. Mar. Polyzoa, ii, 1854, p. 100, pl. cxii.

Lunularia capulus Livingstone, Rec. Austr. Museum, xiv, 3, 1924, p. 198.

The synonymy of the above species has already been dealt with by me in a previous paper (*loc. cit.*). *Selenaria livingstonei* Bretnall and *Lunulites patelliformis* Maplestone have been found to be synonyms.

It is worthy of note that the specimens before me were, like "*L. patelliformis*," secured by Sir Joseph Verco from Investigator Strait, and the examination of this duplicate material confirms my opinion as to the status of this latter species.

Loc. South Australia: Investigator Strait, 20 fathoms.

CELLARIA RIGIDA MacGillivray.

Cellaria rigida MacGillivray, Trans. Proc. Roy. Soc. Victoria, xxi, 1884, p. 92, pl. i, figs. 1-2.

Cellaria rigida MacGillivray in McCoy, Prodr. Zool. Victoria, dec. xi, 1885, p. 17, pl. 105, fig. 1.

Cellaria rigida Jelly, Syn. Cat. Rec. Marine Bryozoa, 1889, p. 44.

The specimens before me are attached to "*Dictyopora grisea*" (*Adeona grisea*), therein agreeing with MacGillivray's remarks regarding anchorage.

Loc. South Australia: 12 miles S.S. by S. from Newland Head, Encounter Bay, 24 fathoms.

CELLARIA AUSTRALIS MacGillivray.

Cellaria fistulosa var. *australis* MacGillivray in McCoy, Prodr. Zool. Victoria, dec. v, 1880, p. 48.

Cellaria fistulosa var. *australis* Hincks, Ann. Mag. Nat. Hist. (5) xiii, 1884, p. 368.

Cellaria australis MacGillivray, Trans. Proc. Roy. Soc. Victoria, xxi, 1884, p. 93.

Loc. South Australia: Off Port Morowie, 14 fathoms.

CELLARIA FISTULOSA (Linnaeus).

Eschara fistulosa Linnaeus, Syst., ed. 10, (1758) 108 (*vide* Hincks, Brit. Marine Polyzoa, i, 1880, p. 106, pl. xiii, figs. 1-4).

Cellaria fistulosa Jelly, Syn. Cat. Rec. Marine Bryozoa, 1889, p. 42.

Loc. South Australia: Off Ardrossan, Gulf St. Vincent, 6-8 fathoms.

CELLARIA ANGUSTILOBA (Busk).

Melicerita angustiloba Busk, Quart. Journ. Geol. Soc., xvi, 1860, p. 261.

Cellaria angustiloba Waters, Quart. Journ. Geol. Soc., xxxviii, 1882, p. 260, pl. ix, figs. 28-30.

Cellaria angustiloba MacGillivray, Trans. Proc. Roy. Soc. Victoria, iv, 1895, p. 27, pl. iii, fig. 16.

The single specimen in the collection does not possess avicularia. It is

slightly worn, though complete enough to show agreement in most details with existing descriptions. A comparison with Tertiary material from deposits at Schnapper Point and Muddy Creek, Victoria, has assisted considerably in substantiating the identification.

Loc. South Australia: Off Cape Jaffa, 300 fathoms.

ARACHNOPUSIA MONOCEROS (Busk).

Lepralia monoceros Busk, Brit. Mus. Catal. Marine Polyzoa, ii, 1854, p. 72.

Arachnopusia monoceros Livingstone, Rec. Austr. Museum, xiv, 3, 1924, p. 203.

Loc. South Australia: Investigator Strait, 20 fathoms; 3 miles S. of Trunk Heads, 16 fathoms; 12 miles S.E. by S. of Newland Head, Encounter Bay, 24 fathoms.

SCUTICELLA VENTRICOSA (Busk).

Catenicella ventricosa Busk, Voy. "Rattlesnake," 1, 1852, p. 357, pl. 1, fig. 1.

Catenicella ventricosa Busk, Brit. Mus. Cat. Marine Polyzoa, 1, 1852, p. 7, pl. ii, figs. 1-2, pl. iii, figs. 1-5.

Scuticella ventricosa Levinsen, Morph. Syst. Stud. Cheil. Bryozoa, 1909, p. 227, pl. xx, figs. 5a-5c; pl. xi, figs. 6a, 6b.

Loc. South Australia: 12 miles S.E. by S. from Newland Head, Encounter Bay, 24 fathoms; 7 miles S.W. from Newland Head, 20 fathoms.

ADEONA GRISEA LAMOUROUX.

Adeona grisea Lamouroux, Expos. Methodique des genres de Polypiers, 1821, p. 40, pl. lxx, fig. 5.

Dictyopora grisea MacGillivray in McCoy, Prodr. Zool. Victoria, dec. vii, 1882, p. 23, pl. 66, fig. 1.

Loc. South Australia: 12 miles S.E. by S. from Newland Head, Encounter Bay, 24 fathoms; Investigator Strait, 20 fathoms; 3 miles S. of Trunk Heads, 16 fathoms; 7 miles S.W. of Newland Head, 20 fathoms. 22.11.1906.

ADEONELLOPSIS FOLIACEA MacGillivray.

Adeonellopsis foliacea MacGillivray, Trans. Proc. Roy. Soc. Victoria, xxii, 1885 (1886), p. 134, pl. ii, fig. 1.

Adeonellopsis foliacea Levinsen, Morph. Syst. Stud. Cheil. Bryozoa, 1909, p. 287, pl. xiv, figs. 5 a-d.

Many specimens of this common Australian species have been sorted from the collection. In addition there are many worn fragments which approach *A. australis* MacGillivray (?), but their identity is extremely uncertain, in view of the fact that many of the characters are obliterated through wear.

(?) Trans. Proc. Roy. Soc. Victoria, xxii, 1885 (1886), p. 135, pl. ii, figs. 2-3.

Moreover, the constant variation of the species allied to *A. foliacea*, makes identification very difficult, and it will not be until a complete revision of the species is made that the genus and its representatives will be fully understood.

Loc. South Australia: 7 miles S.W. from Newland Head, Encounter Bay, 20 fathoms; off Ardrossan, Gulf St. Vincent, 6-8 fathoms.

RETEPORA PHOENICEA Busk.

Retepora phoenicea Busk, Brit. Mus. Cat. Marine Polyzoa, ii, 1854, p. 94, pl. cxxi, figs. 1-2.

Retepora phoenicea MacGillivray, in McCoy, Prodr. Zool. Victoria, dec. x, 1885, p. 27, pl. 98, figs. 1-5.

Loc. South Australia: About 15 miles off Port Wallaroo, January, 1905; Investigator Strait, 20 fathoms; 7 miles S.W. from Newland Head, Encounter Bay, 20 fathoms; 12 miles S.E. by S. from Newland Head, 24 fathoms; off Ardrossan, Gulf St. Vincent, 14 fathoms.

RETEPORA MONILIFERA MacGillivray var. MUNITA Hincks.

Retepora monilifera var. *munita* Hincks, Ann. Mag. Nat. Hist. (5) i, 1878, p. 361.

Retepora monilifera from *munita* MacGillivray in McCoy, Prodr. Zool. Victoria, dec. x, 1885, p. 22, pl. 96, figs. 4-8.

Retepora monilifera var. *munita* Marcus, Kungl. Svenska Vetenskapsakad. Handl., 61, v, 1921, p. 16, pl. 1, figs. 6, 7.

Loc. South Australia: 12 miles S.E. by S. from Newland Head, Encounter Bay, 24 fathoms.

TUBUCELLARIA HIRSUTA (Lamouroux).

Cellaria hirsuta Lamouroux, Hist. des. Polyp., 1816, p. 126, pl. ii, fig. 4.

Tubucellaria hirsuta Levinsen, Morph. Syst. Stud. Cheil. Bryozoa, 1909, p. 306, pl. xvi, figs. 3a-3c.

Loc. South Australia: 12 miles S.E. by S. from Newland Head, Encounter Bay, 24 fathoms.

SCHIZOPORELLA VEROI⁽³⁾ sp. nov.

Figs. 32, 33.

Descr. Zoarium encrusting. Zoecia very slightly ovate and undefined, though their boundaries can be approximately distinguished by the relative positions of the zoecial apertures. Frontal walls punctured and deeply pitted, especially near the boundaries of the zoecia.

Distal half of the zoecial aperture semicircular; lateral borders of proximal

(3) Named for Sir J. Verco.

half converging downwards into a median sinus. Near the sinus the borders of the proximal half are clearly serrated, and at the point of junction of each with the sinus there is a very large and sharply pointed denticle. The proximal border and a portion of each lateral border of the aperture is divided into two

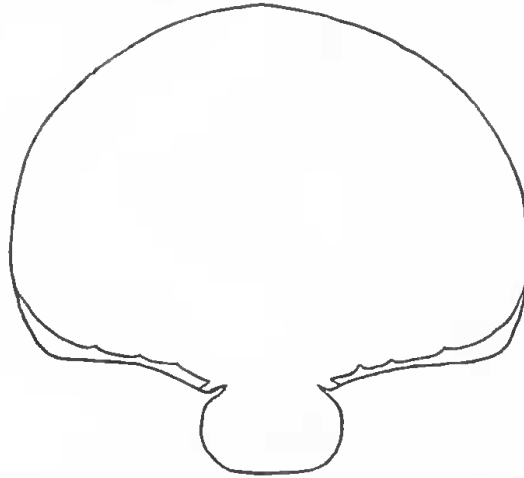


Fig. 33. *Schizoporella vercoi*. Outline of zoocelial aperture, showing secondary toothed rim on the inside.

distinct shelves, one placed above the other. The top shelf carries the sinus, and is continuous, but the lower shelf, which carries the serrated edge, is interrupted at the sinus on either side. The two halves of the lower shelf, however, project a little beyond the top shelf, and each section can be easily seen from directly above. Sharply pointed triangular avicularia, which vary greatly in size, occur at random on the frontal zoocelial walls. Each avicularian cavity is provided with a mandibular pivot or cross-bar, bearing a median ligula, which points backwards.

Loc. South Australia: Beachport, 40 fathoms, 26.12.1905.

SCHIZOPORELLA ACUMINATA Hineks.

Schizoporella acuminata Hineks, Ann. Mag. Nat. Hist. (5) viii, 1881, p. 14, pl. ii, fig. 1.

Schizoporella acuminata Livingstone, Rec. Austr. Museum, xiv, 3, 1924, p. 200.

Schizoporella cecilii Maplestone (part), Rec. Austr. Museum, vii, 4, 1909, p. 268.

Loc. South Australia: Cape Jaffa, 300 fathoms.

PARMULARIA OBLIQUA (MacGillivray).

Eschara obliqua MacGillivray, Trans. Proc. Roy. Soc. Victoria, ix, 2, 1868, p. 137.

Parmularia obliqua Livingstone, Rec. Austr. Museum, xiv, 3, 1924, p. 190, pl. xxiii, figs. 1-2; pl. xxv, fig. 1; pl. xxvi, and text fig. 1.

This extremely abundant deep-water species is well represented in the present collection; its peculiar characters have been dealt with by me in a previous paper (*loc. cit.*). To avoid misunderstanding it may be well to mention here that Canu and Bassler (¹) have credited the genus to Maplestone instead of to MacGillivray.

Loc. South Australia: Off Port Morowie, 14 fathoms; off Ardrossan, Gulf St. Vincent, 6-8 fathoms; about 15 miles off Port Wallaroo, January, 1905; 7 miles S.W. from Newland Head, Encounter Bay, 20 fathoms; 12 miles S.E. by S. from Newland Head, 24 fathoms; Investigator Strait, 20 fathoms; Beachport, 40 fathoms; 3 miles S. of Tink Heads, 16 fathoms.

PARMULARIA MACNEILLI Livingstone.

Parmularia macneilli Livingstone, Rec. Austr. Museum, xiv, 3, 1924, p. 194, pl. xxiv, figs. 1-2; pl. xxv, fig. 2.

As stated in the original description, this species is very rare, and is found among material dredged from deep water.

The hollow proximal border of the zooecial aperture, together with the conspicuous hinge teeth, serve as good characters upon which the species can be separated from its allies. Its occurrence in South Australian waters extends its range westwards from the localities cited in the above paper.

The single specimen before me does not exhibit any variation when compared with the type specimen.

Loc. South Australia: Off Port Morowie, 14 fathoms.

EMBALLOTHECA QUADRATA (MacGillivray).

Lepralia quadrata MacGillivray in McCoy, Prodr. Zool. Victoria, dec. v, 1880, p. 42, pl. 48, fig. 5.

Emballotheca quadrata Levinsen, Morph. Syst. Stud. Cheil. Bryozoa, 1909, p. 334, pl. xviii, figs. 13a-13c.

Although somewhat like *Parmularia obliqua* (MacGillivray), this well-marked species can be easily separated by the arrangement and shape of the zooecia. It is not so abundant as *P. obliqua*, and is represented in the collection by only two fragments.

Loc. South Australia: Beachport, 40 fathoms; 7 miles S.W. of Newland Head, Encounter Bay, 22.11.1906.

(¹) Canu and Bassler, Proc. U.S. Nat. Museum, 69, Art. 14, 1927, pp. 21 and 35.

PERISTOMELLA EXCAVATA (MacGillivray).

Mucronella excavata MacGillivray, Trans. Phil. Inst. Victoria, 1859, iv, p. 166, pl. ii, fig. 4.

Mucronella excavata MacGillivray, Trans. Roy. Soc. S. Austr., xiii, 1890, p. 5.

Escharoides praestans Levinsen, Morph. Syst. Stud. Cheil. Bryozoa, 1909, p. 318, pl. xvii, figs. 4 a-b.

Escharoides excavata Livingstone, Rec. Austr. Museum, xiv, 3, 1924, p. 197.

In a previous paper (*loc. cit.*) I have given notes on the synonymy of this species, and after examining two specimens in the present collection see no reason to depart from the conclusions set out therein, except in regard to the generic position. I have followed Canu and Bassler in this connection, as shown in my Supplementary Report upon the Mawson Antarctic Bryozoa. (⁵).

Loc. South Australia: Beachport, 40 fathoms. 26.12.1905.

DIDYMOSELLA LARVALIS (MacGillivray).

Lepralia larvalis MacGillivray, Trans. Proc. Roy. Soc. Victoria, ix, 1868 (1869), p. 134.

Escharoides larvalis Livingstone, Rec. Austr. Museum, xv, 2, 1926, p. 170, pl. xi.

Didymosella larvalis Canu and Bassler, U.S. Nat. Museum, Bull. 106, 1920, p. 416.

Loc. South Australia: Off Port Morowie, 14 fathoms.

HASWELLINA CORONATA (Reuss).

Gellaria coronata Reuss, Fossile Polyparien d. Wiener Tertiär Beckens, Haidinger Naturwiss. Abhandl., 11, 1848, p. 62, T. viii, fig. 3 (*vide* Levinsen, Morph. Syst. Stud. Cheil. Bryozoa, 1909, p. 299).

This species is not uncommon off the coasts of New South Wales, Victoria, and Tasmania, where it is invariably met with in material taken from deep water. The name *Haswellia* is preoccupied and has been altered in a previous paper (⁶).

Loc. South Australia: Off Ardrossan, Gulf St. Vincent, 6-8 fathoms; off Port Wallaroo, about 15 fathoms, January, 1905; Beachport, 40 fathoms, 26.12.1905; 12 miles S.E. by S. from Newland Head, Encounter Bay, 24 fathoms; off Cape Jaffa, 300 fathoms.

GEPHYROPHORA BITURRITA (Hincks).

Schizoporella biturrita Hincks, Ann. Mag. Nat. Hist. (5) xiv, 1884, p. 280.

Gephyrophora biturrita Canu and Bassler, U.S. Nat. Museum, Bull. 106, 1920, p. 521.

(⁵) Livingstone, Austr. Antarctic Exped. Repts., ser. C, viii, pt. iv, 1928, p. 61.

(⁶) Livingstone, Austr. Antarctic Exped. Repts., ser. C, viii, pt. iv, p. 71.

Loc. South Australia: 7 miles S.W. from Newland Head, Encounter Bay, 20 fathoms, 11.2.1906; 12 miles S.E. by S. from Newland Head, 24 fathoms; off Port Morowie, 14 fathoms.

MICROPORELLA CILIATA (Linnaeus).

Cellepora ciliata Linnaeus, Systema Naturae, ed. xii, 1759, p. 1286.

Microporella ciliata, Canu and Bassler, U.S. Nat. Museum, Bull. 125, 1923, p. 119, pl. xx, figs. 1-6; pl. xxxvi, figs. 4-5.

Loc. South Australia: Investigator Strait, 20 fathoms.

CALLOPORINA DIADEMA (MacGillivray).

Microporella diadema MacGillivray, Trans. Proc. Roy. Soc. Victoria, iv, 1895, p. 65.

Calloporina diadema Canu and Bassler, U.S. Nat. Mus., Bull. 125, 1923, p. 128.

The introduction of this species into the genus *Calloporina* Neviaui appears to be advantageous, and assists considerably in clearing up the large number of species formerly grouped under *Microporella*. I have found, however, that little, if any, reliance can be placed on the shape of the ascopore, as this character is extremely inconsistent, not only in Australian but also in foreign specimens.

Loc. South Australia: About 15 miles off Port Wallaroo, January, 1905.

CONESCHARELLINA ANGULOPORA (Tenison-Woods).

Lunulites angulopora Tenison-Woods, Trans. Roy. Soc. S. Austr., iii, 1879-1880, p. 7, pl. 1, figs. 3-3a-c.

Conescharellina angulopora Livingstone, Rec. Austr. Museum, xiv, 3, 1924, p. 205.

The problem of synonymy surrounding this species has been dealt with by me in a paper on the representatives of the family (*loc. cit.*), and since its publication nothing has come before my notice that would cause a deviation from the conclusions set out therein.

The specimens in the present collection are considerably worn, but undoubtedly belong to this species.

Loc. South Australia: 7 miles S.W. from Newland Head, Encounter Bay, 20 fathoms, 22.11.1906; off Cape Jaffa, 300 fathoms.

BIPORA UMBONATA (Haswell).

Eschara umbonata Haswell, Proc. Linn. Soc. N.S. Wales, v, 1880, p. 41, pl. ii, figs. 5-6.

Bipora umbonata Livingstone, Rec. Austr. Museum, xiv, 3, 1924, pp. 209 and 211.

Bipora umbonata Livingstone, Rec. Austr. Museum, xv, i, 1926, p. 98, pl. v, figs. 4-5.

This extremely interesting species is represented in the present collection by a single fragment. The species does not assume a regular colonial growth, but may be anything from a flat, bilaminar, unbranched growth to a well-branched colony. It can be readily recognized by its bilaminar growth, nodulated surface, and undefined zooecia.

Loc. South Australia: Investigator Strait, 20 fathoms.

SMITTINA NITIDA (Verrill).

Discopora nitida Verrill, Amer. Journ. Sci., ix, 1875, p. 415, pl. vii, fig. 3.

Smittia nitida Waters, Journ. Linn. Soc. Zool., xxxi, 1909, p. 173, pl. xvii, figs. 19, 20.

Loc. South Australia: 7 miles S.W. from Newland Head, Encounter Bay, 20 fathoms, 22.11.1906.

SMITTINA RETICULATA (MacGillivray).

Lepralia reticulata MacGillivray, Ann. Mag. Nat. Hist., ix, 1842, p. 467.

Smittia reticulata Hincks, Hist. Brit. Marine Polyzoa, 1880, p. 346, pl. xlviii, figs. 1-5.

Loc. South Australia: Off Ardrossan, Gulf St. Vincent, 6-8 fathoms.

SPHAEROPORA FOSSA Haswell.

Sphaeropora fossa Haswell, Proc. Linn. Soc. N.S. Wales, v, 1881, p. 42, pl. iii, fig. 5.

Cellepora fossa MacGillivray, Trans. Roy. Soc. Victoria, iv, 1895, p. 108, pl. xiv, figs. 8-10.

Loc. South Australia: Off Cape Jaffa, 300 fathoms.

PETRALIA UNDATA MacGillivray.

Petralia undata MacGillivray, Trans. Proc. Roy. Soc. Victoria, ix, i, 1868, p. 141.

Petralia undata Livingstone, Rec. Austr. Museum, xv, 2, 1926, p. 169, pl. xii, figs. 1-3.

The large number of specimens in the collection before me proves this species to be as abundant in South Australian waters as it is in Victoria and New South Wales. Most of the specimens are worn, and have no doubt suffered removal from their original habitat by the action of currents and associated disturbances.

Loc. South Australia: Off Port Morowie, 14 fathoms; Investigator Strait, 20 fathoms; 12 miles S.E. by S. from Newland Head, Encounter Bay, 24 fathoms; off Ardrossan, Gulf St. Vincent, 14 fathoms; 3 miles S. of Tunk Heads, 16 fathoms.

PETRALIA VULTUR (Hincks).

Fig. 34.

Macronella vultur Hincks, Ann. Mag. Nat. Hist. (5) x, 1882, p. 98, pl. viii, fig. 2.

Macronella vultur MacGillivray in McCoy, Prodr. Zool. Victoria, dec. xii, 1886, p. 65, pl. 116, figs. 5-8.

From past observations, as well as deductions drawn from specimens in the present collection, it has been ascertained that the species is much rarer than the foregoing. It is subjected to considerable structural variation as it proceeds northward from its eastern habitat, as instanced by the number of varieties described from within the tropical zone.

The typical form when young is easily recognizable on account of the clearly cut structural detail, but as the colony grows older it becomes heavily calcified and the characters almost obliterated.

Loc. South Australia: 7 miles S.W. from Newland Head, Encounter Bay, 20 fathoms, 22.11.1906.

PETRALIA HALEI (?) sp. nov.

Fig. 35.

? *Macronella vultur* MacGillivray (non Hincks), Trans. Roy. Soc. Victoria, iv, 1895, p. 99, pl. xiii, fig. 4.

Description. Zoarium massive and heavily calcified. Zoecia large and prominent, separated by faint though distinct margins. Frontal zoecial walls ovate, punctured with large circular and slit-like pores.

The zoecial aperture is arched above and slightly constricted inwards laterally as in *P. dorsiporosa*. The proximal border may be either straight or slightly incurved, and it sometimes possesses two blunt outwardly projecting teeth. Each proximal angle of the aperture is conspicuously sinuated, as in *P. vultur*. The distal half of the frontal zoecial wall below the aperture is raised in the form of a massive, blunt, umbonate structure, on the side of which is a deep avicularian cavity or chamber. Judging by this cavity the mandible must be of considerable size, but, unfortunately, no account of it can be given, owing to the incomplete state of the single specimen before me. Six circular pores, arranged at even distances apart, occur on the distal border of the aperture, indicating that the species possesses spines.

The species is described from a single fragment without oocelia, opercula, or mandibles to the avicularia, but the existing characters mark the form as a new species.

(?) Named for Mr. Herbert M. Hale, Curator, South Australian Museum.

Loc. South Australia: Beachport, 26.12.1905.

Affinities. *P. halei* can be readily recognized by the large size of the zoarium as well as by the character of the gigantic and heavily calcified muero below the aperture. The zooecial apertures of *P. halei* are also more conspicuous than any other known species of the genus.

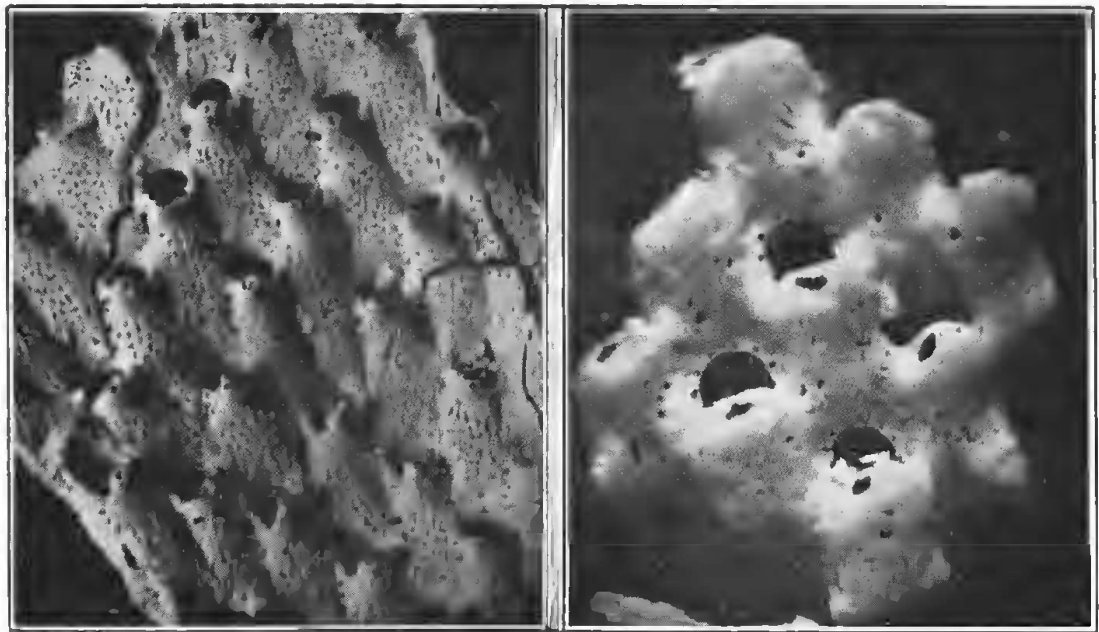


Fig. 34. *Petralia vultur*. Zoocial detail of a heavily calcified colony. Photo, G. C. Clutton.

Fig. 35. *Petralia halei*. Zoocial detail. Photo, G. C. Clutton.

Remarks. MacGillivray (*loc. cit.*) described a form from the Victorian Tertiary deposits which he considered doubtfully referable to *Mucronella vultur* Hincks (now *Petralia vultur*). After examining the large series of *P. vultur* in the Australian Museum collection I am of the opinion that the species could not, in any growth stage, be found to correspond with MacGillivray's description and figure in the above work. This being the case, to what species does MacGillivray's specimen belong? Judging from the specimens and data before me I am inclined towards the opinion that the species is the same as the new form before me, and therefore should be placed in its synonymy.

AMATHIA SPIRALIS Lamouroux.

Amathia spiralis Lamouroux, Hist. des Polyp. Corall. Flex., 1816, p. 161, pl. iv, fig. 2.

Amathia spiralis MacGillivray in McCoy, Prodr. Zool. Victoria, dec. xx, 1890, p. 307, pl. 185, fig. 2.

Loc. South Australia: 12 miles S.E. by S. from Newland Head, Encounter Bay, 24 fathoms.